

STATE OF NEW MEXICO
DEPARTMENT OF PUBLIC HEALTH
SANTA FE

* REPORT OF PNEUMONIA CONTROL PROGRAM

1941-1942

Appreciation is again hereby expressed to the United States Public Health Service for providing funds making these programs possible; to the hospitals and laboratories serving as pneumonia control stations; to the physicians and health officers for their most excellent cooperation.

The following brief remarks on the 1941-42 program may be of interest especially to those who participated:

Thirteen pneumonia control stations throughout the state provided laboratory facilities for the physicians, assuring prompt accurate diagnosis and adequate check of the patient's condition while under therapy. Specific drugs and type specific serum were furnished through the stations. These facilities were made available without cost to patients who were unable to pay for them. Stations did the required laboratory work according to approved fee schedules. The physician's request for these services and medicaments was accepted as indicating that the patient was entitled to receive them.

This is a report on the third successive pneumonia control program carried on in the State of New Mexico. It is gratifying to note the decline in the percentage of fatalities from year to year.

1st year: 1939-40

11.2%

2nd year: 1940-41

7.4%

3rd year: 1941-42

4.2%

For the past three years the same hospitals and laboratories have served as pneumonia control stations and the same procedure followed with one exception: The first two years of the program, the stations issued only sulfapyridine; the third year (present year) the stations furnished both sulfapyridine and sulfathiazole, as requested by the attending physician. (Next year it is planned to furnish sulfapyridine, sulfathiazole and sulfadiazine).

Based on funds available and estimates of costs of treatment, each station was limited to a maximum number of cases to be treated, although as the program progressed, it was possible to make certain adjustments enabling some stations having heavier demands to treat more cases in lieu of other stations receiving fewer requests. The program was opened October 1, 1941 and terminated May 15, 1942.

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One hundred and sixty-seven cases were treated with one hundred and sixty recoveries and seven deaths, a case fatality rate of 4.2%. This is a marked reduction from the 11.9% two years ago and 7.4% of last year's program. In view of the United States Public Health Service's stated purpose of arranging programs "....designed to aid the medical profession in reducing pneumonia mortality", a 4.2% fatality for all cases, types and age groups assumes considerable significance when compared with the average fatality of about 25% to 30% before the introduction of chemotherapy. Cases treated by stations were as follows:

		<u>Cases</u>		
<u>STATION</u>		<u>Total</u>	<u>Recovered</u>	<u>Died</u>
1	Santa Fe	17	14	3
2	Gallup	50	49	1
3	Albuquerque	1	1	0
4	Albuquerque	0	0	0
5	Albuquerque	0	0	0
6	Albuquerque	18	18	0
8	Las Cruces	14	12	2
9	Raton	3	3	0
10	Clovis	5	5	0
11	Las Vegas	13	12	1
12	Carlsbad	21	21	0
13	Carlsbad	7	7	0
14	Silver City	18	18	0

Total amount of sulfapyridine and sulfathiazole used was 2,077.5 grams; average per case, 13.8 grams. Some few physicians preferred sulfadiazine which was exchanged for the sulfapyridine and sulfathiazole issued by the stations.

Total amount of serum used was 1,490,000 units; average per case, 39,211 units. While it was suggested that sulfapyridine or sulfathiazole be administered first, with serum to be furnished all cases not responding promptly, or in which sulfapyridine or sulfathiazole might be otherwise contraindicated, it was, of course, left entirely to the discretion of the physician. Such satisfactory results were obtained with either sulfapyridine or sulfathiazole that stations 3, 10, 12, and 13 issued no serum for their 34 cases, and station 6 found it necessary to issue serum for only one case out of eighteen. Some physicians, however, preferred to combine sulfapyridine or sulfathiazole and serum from the onset. While the percentages given below cannot be considered entirely indicative, due to the great numerical differences in the groups, it is to be noted that the groups receiving sulfapyridine or sulfadiazine only show a lower fatality rate than that for the groups receiving both serum and sulfapyridine or sulfadiazine. Similar results have frequently been reported in the literature.

	<u>Cases</u>			
	<u>Total</u>	<u>Recovered</u>	<u>Died</u>	<u>Fatality</u>
Received sulfapyridine only	59	56	3	5.1%
Received sulfathiazole only	55	54	1	1.8%
Received sulfadiazine only	3	3	0	0
Received sulfapyridine and serum	18	16	2	11.1%
Received sulfathiazole and serum	13	13	0	0
Received sulfadiazine and serum	4	3	1	25.0%
Received sulfapyridine and sulfathiazole	1	1	0	0
Received sulfapyridine and sulfadiazine	2	2	0	0
Received sulfapyridine, sulfathia- zole and serum	1	1	0	0
Received sulfapyridine, sulfathia- zole, sulfadiazine and serum	2	2	0	0
Received neither	9	9	0	0

It has been pointed out that one of the advantages of chemotherapy is its comparatively low cost. For the one hundred and sixty-seven cases treated on this program, counting total expenditures the average cost per case was \$14.58. This was \$1.78 per case more than last year; however it included a supply of sulfadiazine that will be used for the treatment of cases on next year's program. The actual cost of the treatment for all the cases on this year's program was \$11.87 per case. Neither figure includes administrative costs for the whole program, and it must also be remembered that in some cases much laboratory work was done in excess of the maximum laboratory fee to which stations agreed to limit their charges.

	<u>Cases</u>		
	<u>Total</u>	<u>Died</u>	<u>Fatality</u>
Hospital	115	5	4.4%
Home	50	2	4.0%
Both	2	0	0

For the country as a whole the fatality rate in the home is usually lower than that in hospitals, probably because the more severe cases are hospitalized.

ANALYSIS OF CASES

I

	<u>Cases</u>			
	<u>Total</u>	<u>Recovered</u>	<u>Died</u>	<u>Fatality</u>
Broncho pneumonia	65	63	2	3.1%
Lobar pneumonia	98	93	5	5.1%
Broncho and Lobar	1	1	0	0
Hypostatic	1	1	0	0

II

The one hundred and sixty-seven cases were fairly evenly distributed between male and female.

	<u>Cases</u>			
	<u>Total</u>	<u>Recovered</u>	<u>Died</u>	<u>Fatality</u>
Male	87	82	5	5.7%
Female	80	78	2	2.5%

Some leading medical authorities state that sex appears to have very little influence on the death rate of pneumonia.

III

Ages ranged from twenty days to eighty-three years:

<u>Age Group</u>	<u>Cases</u>			
	<u>Total</u>	<u>Recovered</u>	<u>Died</u>	<u>Fatality</u>
Under 1	32	31	1	3.1%
1 - 4	42	38	4	9.5%
5 - 9	16	16	0	0
10 - 19	17	17	0	0
20 - 29	20	20	0	0
30 - 39	14	14	0	0
40 - 49	10	10	0	0
50 - 59	4	4	0	0
60 - 69	8	7	1	12.5%
70 - 79	3	3	0	0
80 and over	1	0	1	100.0%

There were no deaths of either sex between the ages of two and sixty-six years. Last year the fatality rate under one year of age was 21.7% - this year it was 3.1%. Last year the fatality rate in the one to four age group was only 2.6% - this year it was 9.5%.

IV

Practically all known types of pneumococci were represented and were fairly evenly distributed in age groups and by sex. All types with the exception of Type 6 were fairly evenly distributed throughout the state. In this entire series of cases Type 6 was found only in the western part of the state. Thirteen cases had more than one type, eleven were due to streptococcus, three to Friedlander bacillus, forty-one were of undetermined type and the diagnosis of one case was changed to influenza, and one to acute bronchitis.

V

Of the one hundred and sixty cases that recovered, twenty-four had various complications and associated conditions - twelve males and twelve females. Five had otitis media, one nephritis; four followed acute infections such as measles, whooping cough; one had myocardial decompensation; one peri-

carditis, three empyema; one pleural effusion; two pleurisy. The other associated conditions or complications were asthma, serum sickness, fracture, toxic psychosis, etc.

One of these cases deserves special mention. The following is a brief history of the case, a man 68 years of age. Six weeks before developing pneumonia he fractured his left femur. Two days before admission to the hospital, he developed a cough with frothy bloody expectoration. During his stay in the hospital he received the following treatment: 48 grams of sulfa-pyridine, 38 grams of sulfathiazole, 6 grams of sulfadiazine, 100,000 units of Type 19 serum, and two tanks of oxygen. The patient was under treatment from February 7 to March 15, and recovered.

VI

Deaths by Types of Pneumococcus

<u>Types</u>	<u>Total</u>	<u>Cases Recovered</u>	<u>Died</u>	<u>Fatality</u>
2	9	8	1	11.1%
3	8	7	1	12.5%
5	9	7	2	22.2%
6	6	5	1	16.7%
17	5	4	1	20.0%
Undetermined	41	40	1	2.4%

Analysis of Deaths

Of the seven deaths in the entire series, five had lobar and two broncho pneumonia. Physicians' comments on the case records were as follows:

FEMALES

<u>Age</u>	<u>Pneumonia</u>	<u>Type</u>	<u>Comments</u>
19 months	Broncho	3	"Meningitis when first arrived. No improvement. Died same day."
2 years	Lobar	5	"Patient developed heart complications. Called another doctor and died under his care. What procedure he took, I don't know."

MALES

<u>Age</u>	<u>Pneumonia</u>	<u>Type</u>	<u>Comments</u>
11 months	Lobar	6	"Ill two weeks before calling doctor."
14 months	Lobar	Undetermined	"Empyema. Drop in temperature with medication, but process continued to spread in lungs."

<u>Age</u>	<u>Pneumonia</u>	<u>Type</u>	<u>Comments</u>
18 months	Lobar	2	"Pneumococcus meningitis"
66 years	Lobar	5	"Anuria. (caused by sulfapyridine?)
83 years	Broncho	17	"Hypostatic pneumonia."

It is hoped that studies of this kind from year to year will result in establishing even more effective methods for the control of pneumonia in New Mexico.

Division of County Health Administration
July 9, 1942

*This report is being published in the New Mexico Health Officer, but permission to publish it in other reputable periodicals will be granted upon request.